

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-12 (cancelled).

Claim 13 (Currently amended) A method for minimizing total cost of interaction among ~~at least a pair of~~ components of a computer program, each of the components being characterized by one or more data representation properties, ~~the properties comprising string representation and data structure,~~ the method comprising steps of:

- a) carrying out at least a partial run of the program;
- b) monitoring the at least partial run of the program to ~~measure an amount of~~ capture information on interaction between each pair of components, wherein the information on interaction comprises information relating to an explicit request from one component of the pair to the other component of the pair for some data, and wherein the monitoring comprises recording a source component, a destination component, and an amount of data;
- c) determining a cost of interaction between each pair of interacting components;
- d) determining a ~~choice~~ set of interrelated choices of the data representation properties of each of the components of at least one group of components which minimizes total cost of the at least partial run;
- e) assigning the ~~choice~~ set of interrelated choices of the properties to the components for a subsequent at least partial run of the program.

Claim 14 (Currently amended) The method as set forth in ~~Claim~~ claim 13, wherein the data representation properties comprise ~~comprising~~ a choice of string representation of a component, and the amount of interaction measured in step (b) comprises ~~comprising~~ a frequency of interaction between each pair of interacting components; the cost of interaction comprising a function of the frequency and a cost of converting any differing string representations of the pair to a common string representation.

Claim 15 (Currently amended) The method as set forth in ~~Claim~~ claim 14, wherein at least one string representation is selected from ASCII, UNICODE, and EBCDIC.

Claim 16 (Currently amended) The method as set forth in ~~Claim~~ claim 13, the data representation property comprising a choice of data structure of a component, the amount of interaction measured in step (b) comprising a frequency of interaction between each pair of interacting components; the cost of interaction comprising a function of the frequency and a cost of converting any differing choices of data structures of the pair to a common choice of data structure.

Claim 17 (Currently amended) The method as set forth in ~~Claim~~ claim ~~15~~ 16, wherein at least one data structure is selected from hash, tree, and compressed data structures.

Claim 18 (Currently amended) The method as set forth in ~~Claim~~ claim 13, wherein the step (d) of determining the choice is carried out by building a graph with nodes representing program components and edges that join adjacent nodes representing interaction therebetween, each edge being characterized by a cost of each interaction, then using a graph cutting technique to find a minimum cut of the graph.

Claim 19 (Currently amended) A computer readable medium including computer instructions for carrying out a method for minimizing total cost of interaction among components, each of the components being characterized by one or more data representation properties ~~comprising string representation and data structure~~, of a computer program running on a computer system, the medium comprising instructions for:

- a) carrying out at least a partial run of the program;
- b) monitoring the at least partial run of the program to measure an amount of interaction between each pair of components, wherein an interaction comprises an explicit request from one component of the pair to the other component of the pair for some data, and wherein monitoring comprises recording a source component, a destination component and an amount of data;
- c) determining a cost of interaction between each pair of interacting components;
- d) determining a ~~choice~~ set of interrelated choices of the data representation properties of each of the components of at least one group of components which minimizes total cost of the at least partial run; and
- e) assigning the ~~choice~~ set of interrelated choices of the properties to the components for a subsequent at least partial run of the program.

Claim 20 (Currently amended) The computer readable medium as set forth in ~~Claim~~ claim 19, the data representation property comprising a choice of string representation of a component, the amount of interaction measured in instruction (b) comprising a frequency of interaction between each pair of interacting components; the cost of interaction comprising a function of the frequency and a cost of converting any differing string representations of the pair to a common string representation.

Claim 21 (Currently amended) ~~A~~ The computer readable medium as set forth in ~~Claim~~ claim 20, wherein at least one string representation is selected from ASCII, UNICODE, and EBCDIC.

Claim 22 (Currently amended) The computer readable medium as set forth in ~~Claim~~ claim 19, the data representation property ~~properties~~ comprising a choice of data structure of a component, the amount of interaction measured in step (b) comprising a frequency of interaction between each pair of interacting components; the cost of interaction comprising a function of the frequency and a cost of converting any differing choices of data structures of the pair to a common choice of data structure.

Claim 23 (Currently amended) The computer readable medium as set forth in ~~Claim~~ claim 22, wherein at least one data structure is selected from hash, tree, and compressed data structures.

Claim 24 (Currently amended) The computer readable medium as set forth in ~~Claim~~ claim 19 wherein the instruction (d) of determining the choice is carried out by building a graph with nodes representing program components and edges that join adjacent nodes representing interaction therebetween, each edge being characterized by a cost of each interaction, then using a graph cutting technique to find a minimum cut of the graph.

Claim 25 (New) The method of claim 13 wherein the data representation properties comprise string representation.

Claim 26 (New) The method of claim 13 wherein the data representation properties comprise data structure.

Claim 27 (New) The method of claim 19 wherein the data representation properties comprise string representation.

Claim 28 (New) The method of claim 19 wherein the data representation properties comprise data structure.